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Department of Energy

ROCKY FLATS OFFICE
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MAY 17 1993

93-DOE-05477

Mr. Gary Baughman
Chief Hazardous Waste Facilities
Hazardous Materials and Waste Management Division
Colorado Department of Health
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Dear Mr. Baughman:

The U.S. Department of Energy Rocky Flats Office (RFO) is requesting a change to interim status. The change to interim status addresses hazardous waste storage at the 904 Pad, Unit 15B. Unit 15B currently has interim status for 10,700 cubic yards of low-level mixed waste in containers. RFO is requesting a conversion of 5,486 cubic yards of container storage to waste pile storage. The difference of 5214 cubic yards will remain container storage.

Waste pile change to interim status is pursuant to 6 CCR 1007-3, Section 100.20 (b)(3)(ii) which allows changes to interim status provided a revised Part A permit application and justification explaining the need for the change are submitted to the Director of the Colorado Department of Health. The Director may approve the change because it is necessary to comply with State regulations (including the interim status standards in Part 265). As you are aware, RFO is not managing the hazardous waste on Unit 15B in compliance with interim status standards in Part 265 for container storage. A change to interim status to store in waste piles will continue to protect human health and the environment, and comply with interim status standards in Part 265 for waste pile storage. An explanatory justification for waste pile storage is enclosed.

We look forward to your review and approval as soon as possible.

Sincerely,

A. H. Pauole
Acting Manager

Enclosures:
1. Photographs of pondcrete/saltcrete at 904 Pad.
2. Part A Revision 11.
3. Justification and Explanation for Waste Pile Change to Interim Status.
4. Waste Pile Regulatory Analysis.

ADMIN RECORD

A-OU10-000371

Enclosure 3

Change to Interim Status Justification and Explanation
904 Waste Pile Storage

Unit 15B currently has interim status for container storage of up to 10,700 cubic yards of low level mixed waste (LLMW). DOE is requesting waste pile storage be allowed within this interim status capacity. 5,468 cubic yards of unit capacity will be designated as interim status waste pile storage while the remaining 5,232 cubic yards will continue to be container storage. Waste pile storage would apply only to the existing backlog pondcrete/saltcrete currently in plastic-wrapped, fiberboard "triwall" stacks stored within the tents on the 904 Pad. The backlog includes all pondcrete and saltcrete which must be reprocessed for offsite disposal. The waste piles will be operated as "inactive"; no new waste will be added to the waste piles. (See photograph for the current stacking configuration which will also be typical for the waste pile). Long-term pondcrete/saltcrete storage has been a mutual concern and the source of discussions with members of your staff. This change to interim status addresses this concern and facilitates long-term storage of pondcrete/saltcrete triwalls until eventual reprocessing and removal from RFP.

The pondcrete/saltcrete triwalls were created during the 1980's as the product of the treatment process for Bldg 374 evaporator salts and the 207A pond sludge. The triwalls were designated for disposal at the DOE's Nevada Test Site (NTS) disposal facility. The pondcrete/saltcrete triwalls remaining at RFP from this process are currently unsuitable for disposal due to Land Disposal Restrictions and waste acceptance criteria issues. NTS's mixed waste disposal operations are currently shutdown. The duration of this shutdown has surpassed original expectations and the date which NTS can accept mixed waste for disposal remains unknown. Reprocessing of the remaining pondcrete/saltcrete will not begin until a suitable disposal facility is available.

The 904 and 750 tents were completed in early 1990. Beginning in late 1989 and continueing through May 1990, the remaining pondcrete was inspected and repacked for off-site shipment to NTS. Each pondcrete block was opened, the triwall stripped, free liquid was removed, the block inspected, rebagged in plastic and, if it was certified for shipment, packed in a wooden half-crate . Since May 8, 1990 NTS could not accept pondcrete or saltcrete. Liquids have been noticed in some of the layers of plastic wrapping in the remaining uninspected pondcrete blocks. The source of the liquid could be from any or a combination of saturated air condensation, trapped rainwater or excess water from the original pondcrete processing. Within the first several months of 1991, all remaining pondcrete/saltcrete triwalls were drained of any free liquids, rebagged in plastic and placed on 5-inch high wooden pallets. Any pondcrete/saltcrete triwalls lacking structural integrity were placed into watertight metal storage containers (See photograph). These metal containers have been stored both within the tents and outdoors around the perimeter of the 904 Pad and on the north side of the 750 Pad. During the spring of 1992, the pondcrete/saltcrete triwalls stored on the 750 Pad were moved to the 904 Pad to create storage space for the pondcrete expected to be generated by the Solar Pond cleanout project. Any pondcrete/saltcrete with deteriorated packaging was rebagged during this move. Attempts were made to extract any free liquids which had accumulated since 1991. Additionally, the blocks were sorted and stacked by relative structural integrity.

The design and operating practices which now provide waste containment and safe storage include the asphalt 904 pad, the bermed metal-framed fabric tents, the layers of plastic wrapping around the triwalls, the pallets which elevate the triwalls off the asphalt pad as well as the weekly RCRA inspections of all storage facilities. Access to deteriorated triwalls will be an on-going consideration during pondcrete/saltcrete waste pile storage, not only for RCRA concerns but for worker health and safety issues as well. Therefore, some degree of triwall repackaging and restacking may be appropriate to address these concerns during the continueing operation of the waste pile.

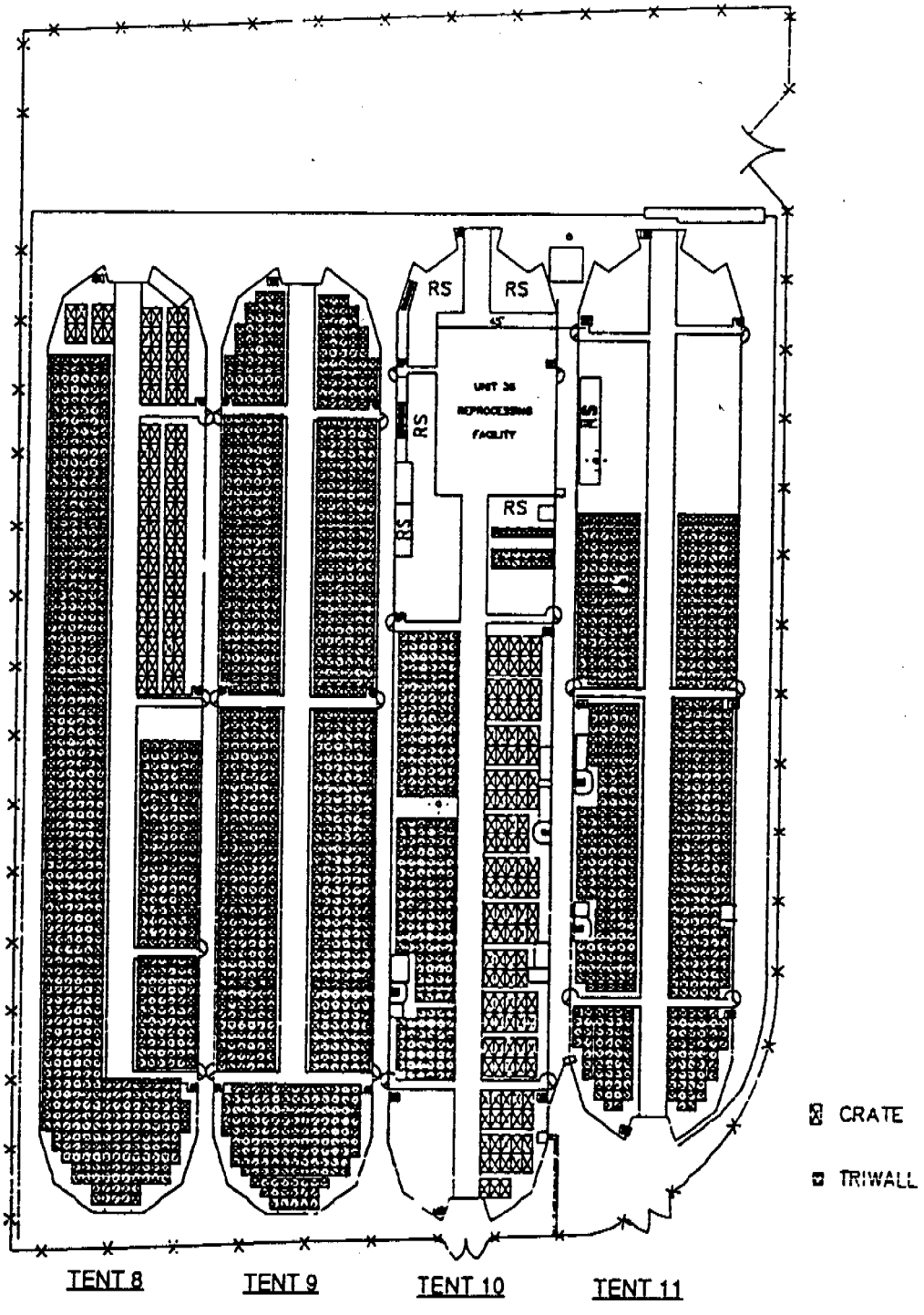
Since the pondcrete/saltcrete was rebagged in 1991, the only hazardous waste spill occurred when, during forklift handling to reconfigure the stacking arrangement, one of the saltcrete containers broke open and spilled approximately 50 pounds of saltcrete with the consistency of sand on the floor inside one of the storage tents . This incident highlights the concern for spills that result from the disturbance of the stacks of existing material. Spills that may result from the handling required to achieve container storage aisle space requirements are therefore a major concern. RFO has concluded based upon operational experience that storing pondcrete/saltcrete in the current configuration existing in the tents as a waste pile meets the statutory mandate of the Colorado Hazardous Waste Regulations to protect human health and the environment. RFO believes this is an appropriate regulatory approach as well as a cost effective solution to the 904 Pad storage issue. It has been estimated that the cost to the Solar Ponds Program to implement container storage on the 904 Pad and to restack the pondcrete/saltcrete would be $ 1.7 million dollars. Additionally, waste minimization benefits may be realized if no new containers were added for container storage compliance which would have to be subsequently processed during the remixing operation.

This change to interim status includes a DOE/RFO request for an exemption from certain design requirements of Section 265.254 as provided for in Section 264.251(b). This exemption (Enclosure 4) is based upon successfully demonstrated alternate design and operating practices.

904 PAD
WASTE PILE VOLUME CALCULATIONS

TENT	TRIWALLS	CUBIC YARDS	% OF TOTAL
8	2,219	1,562	28.6%
9	3,110	2,189	40.0%
10	765	538	9.8%
11	1,677	1,180	21.6%
TOTALS:	7,771	5,468	100.0%

NOTE: TOTALS ARE FROM THE RFP WASTE AND ENVIRONMENTAL MANAGEMENT SYSTEM (WEMS)



CURRENT UNIT 15B WASTE CONFIGURATION

Enclosure 4.

WASTE PILE REGULATORY ANALYSIS
6 CCR 1007-3 PART 265, SUBPART L
INTERIM STATUS WASTE PILE REGULATIONS

REGULATION	COMPLIANCE DESCRIPTION
265.250 Applicability The regulations in this subpart apply to owners and operators of facilities that treat or store hazardous waste in piles, except as Section 265.1 provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under Subpart N.	Waste pile designation applies to Rocky Flats Plant (RFP) RCRA Unit 15B.
265.251 Protection From Wind The owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the pile so that wind dispersal is controlled.	Four existing metal frame, fabric tent structures within Unit 15B currently protect the waste piles from the wind.
265.252 Waste Analysis In addition to the waste analyses required by Section 265.13 (General Waste Analysis), the owner or operator must analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, unless (1) The only wastes the facility receives which are amenable to compatible with each other, or (2) the waste received is compatible with the waste in the pile to which it is to be added. The analysis conducted must be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and treatment.	No new wastes will be added to the waste piles. The waste which was in containers is the same waste now in waste piles, the waste characterization has not changed. The waste in piles includes the plastic wrap, wooden pallets and compromised containers. Pondcrete and saltcrete blocks are chemically compatible.
265.253 Containment If leachate or run-off from a pile is hazardous waste, then either:	There is no run-off from a waste pile covered by a tent.

REGULATION	COMPLIANCE DESCRIPTION
	Small quantities (less than a pint) of leachate may accumulate between the pondcrete/ saltcrete blocks and the innermost layer of plastic. This leachate is a hazardous waste since it is derived from a hazardous waste. Any leachate visible during inspections of the external portions of the waste pile will be removed (interior portions of the waste pile are not accessible for inspections). After the cardboard boxes were wrapped in plastic in 1991, excess water from original processing as well as condensate water has been observed in quantities less than a gallon between layers of plastic. This water would be a hazardous waste only if it exhibits a toxicity characteristic.
(a)(1) The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage;	All waste pile pondcrete/saltcrete is elevated 5 inches by wooden pallets. All wooden pallets are sitting on a 3 inch thick asphalt pad which is chemically compatible with plastic-wrapped pondcrete/saltcrete. The asphalt pad was built on 6 inches of rock road base material.
(2) The owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from a 100-year storm;	The storage tents, plastic wrap and pallets provide adequate protection from precipitation run-on/run-off.
(3) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 100-year storm; and	Storm water flows away from the 904 Pad, which is located on the drainage divide between the South Walnut Creek and the Woman Creek. This divide is elevated above the 100-year floodplain as shown in the RFP Drainage and Flood Control Master Plan issued April, 1992. An engineered run-on control system is therefore not required.

REGULATION	COMPLIANCE DESCRIPTION
(4) Collection and holding facilities (e.g. tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously to maintain design capacity of the system; or	When the 904 Pad surface areas surrounding the storage tents are sealed in the spring of 1993, a summarized report with the analytical data for run-off collected from the 904 Pad for the past three years will be submitted to CDH as per agreement February 14, 1991. Asphalt berms/ramps will also be placed at the doors of the tents. Small amounts of run-off have been observed during precipitation events, running through the tents. The run-off is analyzed, collected and sent to Building 374 for treatment after every precipitation event.
(b)(1) The pile must be protected from precipitation and run-on by some other means; and	
(2) No liquids or wastes containing free liquids may be placed in the pile.	No wastes of any type will be added to the existing pondcrete and saltcrete waste piles. No leachate is expected to be released from the waste piles. Should liquid escape from the external plastic wrap it will be collected with a wet-dry vacuum cleaner and stored in containers within Unit 15B.
(c) RESERVED	
265.254 Design Requirements The owner or operator of a waste pile is subject to the requirements for liners and leachate collection systems or equivalent protection provided in Section 264.251 (Design and Operating Requirements for Permitted Waste Piles) of these regulations, with respect to each new unit, replacement of an existing unit, or lateral expansion of an existing unit that is within the area identified in the Part A permit application, and with respect to waste received beginning May 8, 1985.	An analysis of "equivalent protection" as provided in Section 264.251 (Design and Operating Requirements for Permitted Waste Piles) follows.

REGULATION	COMPLIANCE DESCRIPTION
264.251 Design and operating requirements. (a) A waste pile (except for an existing portion of a waste pile must have: (1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner must be: (i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation; (ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and	The Department of Energy Rocky Flats is applying for an exemption from the liner (264.251 (a)(1)) and leachate collection and removal system(264.251(a)(2)) requirements referenced by 265.251.
(iii) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and	Protection from migration of wastes out of the pile is provided by an asphalt pad completely covering the entire 904 Pad. In the summer of 1993 asphalt berms/ramps will be installed at the doors of the tents to prevent run-on/run-off.

REGULATION	COMPLIANCE DESCRIPTION
(2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The Department will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be: (i) Constructed of materials that are; (A) Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and (B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and (ii) Designed and operated to function without clogging through the scheduled closure of the waste pile.	
(b) The owner or operator will be **exempted** from the requirements of paragraph (a) of this section if the Department finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see Sec 264.93) into the ground water or surface water at any future time. In deciding whether to grant any exemption, the Department will consider: (1) The nature and quantity of the wastes:	Alternate Design and Operating Practices: Protection from migration of wastes "out of the pile" is provided by the original cardboard boxes, wooden boxes, internal plastic bags, and external plastic wrap.
(2) The proposed alternate design and operation;	
(3)The hydrogeologic setting of the facility, including attenuative capacity and thickness of the liners and soils present between the pile and ground water or surface water; and	The soil is protected from the waste by the asphalt pad.

REGULATION	COMPLIANCE DESCRIPTION
(4) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.	No leachate is expected to be released from the waste piles. Should liquid escape from the external plastic wrap it will be collected with a wet-dry vacuum cleaner and stored in containers within Unit 15B.
(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 100-year storm.	Run-on is prevented from contact with the waste by the tent, and several layers of packaging.
(d) The owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 100-year storm.	Contact between the waste and precipitation run-off is prevented by the storage tents, pallets, containers and plastic wrap.
(e) Collection and holding facilities (e.g. tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.	Run-on/run-off is prevented from contact with the waste by the storage tents, the plastic wrapping and elevated pallets as described above.
(f) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.	Pondcrete and saltcrete triwalls are protected from wind dispersion by the 904 Pad storage tents and three layers of packaging.
(g) The Department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.	
265.255 [Reserved]	
265.256 Special requirements for ignitable or reactive waste	No ignitable or reactive wastes will be or have been placed in the piles.
265.257 Special requirements for incompatible wastes	No incompatible wastes will be or have been placed in the piles.

REGULATION	COMPLIANCE DESCRIPTION
265.258 Closure and post-closure	At closure, the waste pile pondcrete and saltcrete, containers and plastic wrapping will be removed for treatment, reformulation and/or disposal at another facility. The four existing metal frame fabric tent structures will be decontaminated. The asphalt 904 Pad will either be decontaminated or remediated in accordance with the Interagency Agreement (IAG).

cc w/ Enclosures 3 & 4:
F. Dowsett, CDH
D. Waltz, CDH
J. Schieffelin, CDH
D. Maxwell, EPA
T. Burns, EPA
M. Hestmark, EPA
J. Hartman, AMTER, RFO
M. Karol, AMFO, RFO
T. Lukow, WPD, RFO
J. Wienand, WPD, RFO
S. Surovchak, ERD, RFO
N. Matsuura, WOB, RFO
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B. Bruninga, EG&G
T. Hedahl, EG&G
B. Benedetti, EG&G